

REMARKS

Claims 1-12 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1, 3, 4, 6, 7, 9, 10 and 11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Asakura et al. (U.S. Pat. No. 6,806,938). This rejection is respectfully traversed.

Asakura cannot anticipate independent claims 1, 7 and 11. Applicant's inventions defined in Claims 1, 7 and 11 have two characteristics: (1) the display area includes the intersecting sections; and (2) the intersecting sections satisfy the effective voltage relationship " $V_{cross} < V_{on}$." Asakura does not explicitly or inherently disclose these two characteristics, particularly the effective voltage relationship when Asakura does not even recognize the problem of providing the intersecting sections in the display area for image display.

In the LCD panel industry, the display area is understood as the area for displaying images within the LCD panel. Generally, LCD panel designers call the area that contributes to image display and that is exposed to users a "display area." In a prior art LCD panel, not the entire area of the pixel matrix contributes to image display. The pixel matrix may include display pixels which effectively display images and dummy pixels that are located outside the display pixels. In the prior art display device where

the pixel matrix has dummy pixels, the boundary of the display area is formed inside the pixel matrix and between the display pixels and the dummy pixels.

While dummy pixels are a part of the pixel matrix, the dummy pixels form a dummy area and display only the light, such as backlight or front light, or the outside light with a reflective panel. The dummy area does not display image and is not seen by the users. In order to shield the dummy pixels from users, it is common to use a shading member, or a housing of the electronic device to cover the dummy area. Usually, it is considered a good design to have the dummy area as small as possible.

Asakura explicitly defines area 3 as the display area, meaning only area 3 contributes to image display and is seen by the users. The portion of the pixel matrix located between area 3 and the sealing region 7 is considered a dummy area. This portion does not contribute to image display and is not seen by the users because Asakura uses a light-shielding film J in this area (col. 15, lines 14; FIG. 12). As such, the voltage of the intersecting sections, which are located in this dummy area, is not of a concern to Asakura.

In contrast, the present application is aimed at increasing the display area that contributes to image display. The present application uses the entire pixel matrix to effectively display image. The boundary of the display area of the present application is formed outside and next to the pixel matrix. As such, a larger display area which uses the entire pixel matrix to display image can be achieved. With the effective voltage characteristics claimed in the present invention, the intersecting sections can contribute to image display and the frame area outside the display area can be reduced accordingly (comparing FIG. 17 of Asakura and FIG. 1 of the present application). In the

present invention, the entire area surrounded by inside edges of the sealing material is defined as the "display area," which contributes to image display and which is exposed to the users. In Asakura, however, the area outside the display area 3 is the frame area as shown in FIG. 2.

The Examiner asserts that Asakura inherently discloses the voltage relationship since the display device would malfunction if the intersecting sections have a voltage relationship other than the claimed "V_{cross}<V_{on}" relationship.

As previously set forth, the intersecting sections of Asakura are located in the dummy area and do not contribute to image display. While both the present application and Asakura provide the intersecting sections within the sealing area, the frame area of Asakura is provided outside the display area 3 as opposed to the present application where the frame area is provided outside the sealing materials. Without using the intersecting sections to display an image, Asakura does not even recognize the problem that is caused by using the intersecting sections to display image, let alone the voltage of these intersecting sections. Accordingly, Applicant respectfully requests that the rejection of claims 1, 7 and 11 be withdrawn.

Claims 3, 4, 9, 10 depend on either claim 1 or claim 7 and thus distinguish over these references for at least the reasons stated above in connection with claim 1 or claim 7. Accordingly, Applicant respectfully requests that the rejections of claims 3, 4, 9 and 10 be withdrawn.

Claim 6 is directed to electronic equipment provided with the liquid crystal device according to claim 1 and thus is distinguishable over Asakura for at least the reasons

stated above in connection with claim 1. Accordingly, Applicant respectfully requests that the rejection of claim 6 be withdrawn.

REJECTION UNDER 35 U.S.C. § 103

Claims 2, 8 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Asakura et al. (U.S. Pat. No. 6,806,938) in view of Nomura et al. (U.S. Pat. No. 6,236,385). This rejection is respectfully traversed.

Claims 2, 8 and 12 depend on either claim 1 or claim 7. Nomura et al. cannot make claim 2, 8 and 12 obvious because Nomura et al. does not disclose any intersecting sections in the display area, let alone the voltage applied to the intersecting sections. Accordingly, Applicant respectfully requests that the rejection of claim, 2, 8 and 12 withdrawn.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Asakura et al. (U.S. Pat. No. 6,806,938) in view of Morimoto et al. (U.S. Pat. No. 6,181,406). This rejection is respectfully traversed.

Claim 5 is a dependent claim of claim 1. Morimoto et al. cannot make claim 5 obvious because Morimoto et al. does not disclose any intersecting sections in the display area, let alone the voltage applied to the intersecting sections. Accordingly, Applicant respectfully requests that the rejection of claim 5 be withdrawn.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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